SEQUENCE LISTING

<110> Statens Serum Institut, Copenhagen Denmark

<120> Nucleic Acid Fragments and Polypeptide Fragments Derived from M. Tuberculosis

<130> 20486US5

<150> US09/615,947
<151> 2000-07-13

<150> US09/246,191
<151> 1998-12-30

<160> 68

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<210> 1
<211> 324
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<222> (1)...(321)

<400> 1

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Leu Thr His Lys Arg Thr Lys Arg Gln Pro Ala Ile Ala Ala Gly Leu
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aac gcc ccg cgt cgg aat cgc gtt ggg cgg caa cat ggt tgg ccg gcc       96
Asn Ala Pro Arg Arg Asn Arg Val Gly Arg Gln His Gly Trp Pro Ala
            20                  25                  30

gac gtt ccg tcc gcc gag cag cgc cgc gcc caa cgg cag cgc gac ctc      144
Asp Val Pro Ser Ala Glu Gln Arg Arg Ala Gln Arg Gln Arg Asp Leu
        35                  40                  45

gag gct atc cgc cga gcg tac gcc gag atg gtg gcg aca tca cac gaa      192
Glu Ala Ile Arg Arg Ala Tyr Ala Glu Met Val Ala Thr Ser His Glu
    50                  55                  60

atc gac gac gac aca gcc gaa ctg gcg ctg ttg tcg atg cat ctc gac      240
Ile Asp Asp Asp Thr Ala Glu Leu Ala Leu Leu Ser Met His Leu Asp
65                  70                  75                  80

gat gag cag cgc cgg ctt gag gcg ggg atg aag ctc ggc tgg cat ccg      288
Asp Glu Gln Arg Arg Leu Glu Ala Gly Met Lys Leu Gly Trp His Pro
                85                  90                  95

tat cac ttc ccc gac gaa ccc gac agc aaa cag tga                      324
Tyr His Phe Pro Asp Glu Pro Asp Ser Lys Gln
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            20                  25                  30
Asp Val Pro Ser Ala Glu Gln Arg Arg Ala Gln Arg Gln Arg Asp Leu
        35                  40                  45
Glu Ala Ile Arg Arg Ala Tyr Ala Glu Met Val Ala Thr Ser His Glu
    50                  55                  60
Ile Asp Asp Asp Thr Ala Glu Leu Ala Leu Leu Ser Met His Leu Asp
65                  70                  75                  80
Asp Glu Gln Arg Arg Leu Glu Ala Gly Met Lys Leu Gly Trp His Pro
                85                  90                  95
Tyr His Phe Pro Asp Glu Pro Asp Ser Lys Gln
            100                 105

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      <220>
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 1               5                  10                  15

gag ctt gtc ggc ggc ccg cca gtc gag gct tcg gcc gcc gcg ctg gcc      96
Glu Leu Val Gly Gly Pro Pro Val Glu Ala Ser Ala Ala Ala Leu Ala
            20                  25                  30

ggc gac gcc gcg ggc gca tgg cgg acc gcg gcc gtc gag ctt gcg cga     144
Gly Asp Ala Ala Gly Ala Trp Arg Thr Ala Ala Val Glu Leu Ala Arg
        35                  40                  45

gcg ttg gtc cgc gct gtg gcg gag tcg cac ggc gtc gcg gcc gtt ttg     192
Ala Leu Val Arg Ala Val Ala Glu Ser His Gly Val Ala Ala Val Leu
    50                  55                  60

ttc gcc gcg acg gcc gcc gcg gcg gcg gcc gtc gac cgg ggt gat ccg     240
Phe Ala Ala Thr Ala Ala Ala Ala Ala Ala Val Asp Arg Gly Asp Pro
65                  70                  75                  80

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Pro
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            20                  25                  30
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        35                  40                  45
Ala Leu Val Arg Ala Val Ala Glu Ser His Gly Val Ala Ala Val Leu
    50                  55                  60
Phe Ala Ala Thr Ala Ala Ala Ala Ala Ala Val Asp Arg Gly Asp Pro
65                  70                  75                  80
Pro


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cca ccg gag cta aat acc gca cgg ctg atg gcc ggc gcg ggt ccg gct      102
Pro Pro Glu Leu Asn Thr Ala Arg Leu Met Ala Gly Ala Gly Pro Ala
 10                  15                  20                  25

cca atg ctt gcg gcg gcc gcg gga tgg cag acg ctt tcg gcg gct ctg      150
Pro Met Leu Ala Ala Ala Ala Gly Trp Gln Thr Leu Ser Ala Ala Leu
                 30                  35                  40

gac gct cag gcc gtc gag ttg acc gcg cgc ctg aac tct ctg gga gaa      198
Asp Ala Gln Ala Val Glu Leu Thr Ala Arg Leu Asn Ser Leu Gly Glu
             45                  50                  55

gcc tgg act gga ggt ggc agc gac aag gcg ctt gcg gct gca acg ccg      246
Ala Trp Thr Gly Gly Gly Ser Asp Lys Ala Leu Ala Ala Ala Thr Pro
         60                  65                  70

atg gtg gtc tgg cta caa acc gcg tca aca cag gcc aag acc cgt gcg      294
Met Val Val Trp Leu Gln Thr Ala Ser Thr Gln Ala Lys Thr Arg Ala
     75                  80                  85

atg cag gcg acg gcg caa gcc gcg gca tac acc cag gcc atg gcc acg      342
Met Gln Ala Thr Ala Gln Ala Ala Ala Tyr Thr Gln Ala Met Ala Thr
 90                  95                 100                 105

acg ccg tcg ctg ccg gag atc gcc gcc aac cac atc acc cag gcc gtc      390
Thr Pro Ser Leu Pro Glu Ile Ala Ala Asn His Ile Thr Gln Ala Val
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110 115 120

ctt acg gcc acc aac ttc ttc ggt atc aac acg atc ccg atc gcg ttg 438
Leu Thr Ala Thr Asn Phe Phe Gly Ile Asn Thr Ile Pro Ile Ala Leu
125 130 135

acc gag atg gat tat ttc atc cgt atg tgg aac cag gca gcc ctg gca 486
Thr Glu Met Asp Tyr Phe Ile Arg Met Trp Asn Gln Ala Ala Leu Ala
140 145 150

atg gag gtc tac cag gcc gag acc gcg gtt aac acg ctt ttc gag aag 534
Met Glu Val Tyr Gln Ala Glu Thr Ala Val Asn Thr Leu Phe Glu Lys
155 160 165

ctc gag ccg atg gcg tcg atc ctt gat ccc ggc gcg agc cag agc acg 582
Leu Glu Pro Met Ala Ser Ile Leu Asp Pro Gly Ala Ser Gln Ser Thr
170 175 180 185

acg aac ccg atc ttc gga atg ccc tcc cct ggc agc tca aca ccg gtt 630
Thr Asn Pro Ile Phe Gly Met Pro Ser Pro Gly Ser Ser Thr Pro Val
190 195 200

ggc cag ttg ccg ccg gcg gct acc cag acc ctc ggc caa ctg ggt gag 678
Gly Gln Leu Pro Pro Ala Ala Thr Gln Thr Leu Gly Gln Leu Gly Glu
205 210 215

atg agc ggc ccg atg cag cag ctg acc cag ccg ctg cag cag gtg acg 726
Met Ser Gly Pro Met Gln Gln Leu Thr Gln Pro Leu Gln Gln Val Thr
220 225 230

tcg ttg ttc agc cag gtg ggc ggc acc ggc ggc ggc aac cca gcc gac 774
Ser Leu Phe Ser Gln Val Gly Gly Thr Gly Gly Gly Asn Pro Ala Asp
235 240 245

gag gaa gcc gcg cag atg ggc ctg ctc ggc acc agt ccg ctg tcg aac 822
Glu Glu Ala Ala Gln Met Gly Leu Leu Gly Thr Ser Pro Leu Ser Asn
250 255 260 265

cat ccg ctg gct ggt gga tca ggc ccc agc gcg ggc gcg ggc ctg ctg 870
His Pro Leu Ala Gly Gly Ser Gly Pro Ser Ala Gly Ala Gly Leu Leu
270 275 280

cgc gcg gag tcg cta cct ggc gca ggt ggg tcg ttg acc cgc acg ccg 918
Arg Ala Glu Ser Leu Pro Gly Ala Gly Gly Ser Leu Thr Arg Thr Pro
285 290 295

ctg atg tct cag ctg atc gaa aag ccg gtt gcc ccc tcg gtg atg ccg 966
Leu Met Ser Gln Leu Ile Glu Lys Pro Val Ala Pro Ser Val Met Pro
300 305 310

gcg gct gct gcc gga tcg tcg gcg acg ggt ggc gcc gct ccg gtg ggt 1014
Ala Ala Ala Ala Gly Ser Ser Ala Thr Gly Gly Ala Ala Pro Val Gly
315 320 325

gcg gga gcg atg ggc cag ggt gcg caa tcc ggc ggc tcc acc agg ccg 1062
Ala Gly Ala Met Gly Gln Gly Ala Gln Ser Gly Gly Ser Thr Arg Pro
330 335 340 345

ggt ctg gtc gcg ccg gca ccg ctc gcg cag gag cgt gaa gaa gac gac 1110

Gly Leu Val Ala Pro Ala Pro Leu Ala Gln Glu Arg Glu Glu Asp Asp
350 355 360

gag gac gac tgg gac gaa gag gac gac tgg tgagctcccg taatgacaac 1160
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365 370

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<210> 6
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<212> PRT
<213> Mycobacterium tuberculosis

<400> 6
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20 25 30
Gly Trp Gln Thr Leu Ser Ala Ala Leu Asp Ala Gln Ala Val Glu Leu
35 40 45
Thr Ala Arg Leu Asn Ser Leu Gly Glu Ala Trp Thr Gly Gly Gly Ser
50 55 60
Asp Lys Ala Leu Ala Ala Ala Thr Pro Met Val Val Trp Leu Gln Thr
65 70 75 80
Ala Ser Thr Gln Ala Lys Thr Arg Ala Met Gln Ala Thr Ala Gln Ala
85 90 95
Ala Ala Tyr Thr Gln Ala Met Ala Thr Thr Pro Ser Leu Pro Glu Ile
100 105 110
Ala Ala Asn His Ile Thr Gln Ala Val Leu Thr Ala Thr Asn Phe Phe
115 120 125
Gly Ile Asn Thr Ile Pro Ile Ala Leu Thr Glu Met Asp Tyr Phe Ile
130 135 140
Arg Met Trp Asn Gln Ala Ala Leu Ala Met Glu Val Tyr Gln Ala Glu
145 150 155 160
Thr Ala Val Asn Thr Leu Phe Glu Lys Leu Glu Pro Met Ala Ser Ile
165 170 175
Leu Asp Pro Gly Ala Ser Gln Ser Thr Thr Asn Pro Ile Phe Gly Met
180 185 190
Pro Ser Pro Gly Ser Ser Thr Pro Val Gly Gln Leu Pro Pro Ala Ala
195 200 205
Thr Gln Thr Leu Gly Gln Leu Gly Glu Met Ser Gly Pro Met Gln Gln
210 215 220
Leu Thr Gln Pro Leu Gln Gln Val Thr Ser Leu Phe Ser Gln Val Gly
225 230 235 240
Gly Thr Gly Gly Gly Asn Pro Ala Asp Glu Glu Ala Ala Gln Met Gly
245 250 255
Leu Leu Gly Thr Ser Pro Leu Ser Asn His Pro Leu Ala Gly Gly Ser
260 265 270
Gly Pro Ser Ala Gly Ala Gly Leu Leu Arg Ala Glu Ser Leu Pro Gly
275 280 285
Ala Gly Gly Ser Leu Thr Arg Thr Pro Leu Met Ser Gln Leu Ile Glu
290 295 300
Lys Pro Val Ala Pro Ser Val Met Pro Ala Ala Ala Ala Gly Ser Ser
305 310 315 320
Ala Thr Gly Gly Ala Ala Pro Val Gly Ala Gly Ala Met Gly Gln Gly
325 330 335
Ala Gln Ser Gly Gly Ser Thr Arg Pro Gly Leu Val Ala Pro Ala Pro
340 345 350

Leu Ala Gln Glu Arg Glu Glu Asp Asp Glu Asp Asp Trp Asp Glu Glu
355 360 365
Asp Asp Trp
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<210> 7
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<212> PRT
<213> Mycobacterium tuberculosis

<400> 7
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1 5 10 15
Asn Ala

<210> 8
<211> 18
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<213> Mycobacterium tuberculosis

<400> 8
Ala Ile Ala Ala Gly Leu Asn Ala Pro Arg Arg Asn Arg Val Gly Arg
1 5 10 15
Gln His

<210> 9
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 9
Arg Asn Arg Val Gly Arg Gln His Gly Trp Pro Ala Asp Val Pro Ser
1 5 10 15
Ala Glu

<210> 10
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<213> Mycobacterium tuberculosis

<400> 10
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1 5 10 15
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<210> 11
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 11
Arg Ala Gln Arg Gln Arg Asp Leu Glu Ala Ile Arg Arg Ala Tyr Ala
1 5 10 15
Glu Met

<210> 12
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 12
Ile Arg Arg Ala Tyr Ala Glu Met Val Ala Thr Ser His Glu Ile Asp
1 5 10 15
Asp Asp

<210> 13
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 13
Thr Ser His Glu Ile Asp Asp Asp Thr Ala Glu Leu Ala Leu Leu Ser
1 5 10 15
Met His

<210> 14
<211> 18
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<213> Mycobacterium tuberculosis

<400> 14
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1 5 10 15
Glu Ala

<210> 15
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<213> Mycobacterium tuberculosis

<400> 15
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<210> 16
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<400> 16
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<210> 17
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<213> Mycobacterium tuberculosis

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1 5 10 15
Glu Leu

<210> 18
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<213> Mycobacterium tuberculosis

<400> 18
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1 5 10 15
Ala Leu

<210> 19
<211> 18
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<400> 19
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1 5 10 15
Ala Ala

<210> 20
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<213> Mycobacterium tuberculosis

<400> 20
Ala Trp Arg Thr Ala Ala Val Glu Leu Ala Arg Ala Leu Val Arg Ala
1 5 10 15
Val Ala

<210> 21
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 21
Leu Val Arg Ala Val Ala Glu Ser His Gly Val Ala Ala Val Leu Phe
1 5 10 15
Ala Ala

<210> 22
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<400> 22
Val Leu Phe Ala Ala Thr Ala Ala Ala Ala Ala Val Asp Arg Gly Asp

1 5 10 15
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<210> 23
<211> 18
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<213> Mycobacterium tuberculosis

<400> 23
Met Asp Tyr Phe Ile Arg Met Trp Asn Gln Ala Ala Leu Ala Met Glu
1 5 10 15
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<210> 24
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 24
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1 5 10 15
Leu Phe

<210> 25
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 25
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1 5 10 15
Ile Leu

<210> 26
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 26
Leu Glu Pro Met Ala Ser Ile Leu Asp Pro Gly Ala Ser Gln Ser Thr
1 5 10 15
Thr Asn

<210> 27
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 27
Gly Ala Ser Gln Ser Thr Thr Asn Pro Ile Phe Gly Met Pro Ser Pro
1 5 10 15
Gly Ser

<210> 28
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 28
Phe Gly Met Pro Ser Pro Gly Ser Ser Thr Pro Val Gly Gln Leu Pro
1 5 10 15
Pro Ala

<210> 29
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<212> PRT
<213> Mycobacterium tuberculosis

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1 5 10 15
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<210> 30
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<212> PRT
<213> Mycobacterium tuberculosis

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Gln Thr Leu Gly Gln Leu Gly Glu Met Ser Gly Pro Met Gln Gln Leu
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Thr Gln

<210> 31
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<212> PRT
<213> Mycobacterium tuberculosis

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<210> 32
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

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Gln Gln Val Thr Ser Leu Phe Ser Gln Val Gly Gly Thr Gly Gly Gly
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Asn Pro

<210> 33
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<212> PRT
<213> Mycobacterium tuberculosis

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1 5 10 15
Gly Leu

<210> 34
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 34
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<210> 35
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 35
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1 5 10 15
Ala Gly

<210> 36
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 36
Gly Gly Ser Gly Pro Ser Ala Gly Ala Gly Leu Leu Arg Ala Glu Ser
1 5 10 15
Leu Pro

<210> 37
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 37
Leu Leu Arg Ala Glu Ser Leu Pro Gly Ala Gly Gly Ser Leu Thr Arg
1 5 10 15
Thr Pro

<210> 38
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 38
Gly Gly Ser Leu Thr Arg Thr Pro Leu Met Ser Gln Leu Ile Glu Lys
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Pro Val

<210> 39
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

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1 5 10 15
Ala Ala

<210> 40
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 40
Ser Val Met Pro Ala Ala Ala Ala Gly Ser Ser Ala Thr Gly Gly Ala
1 5 10 15
Ala Pro

<210> 41
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 41
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1 5 10 15
Ala Gln

<210> 42
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 42
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1 5 10 15
Val Ala

<210> 43
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 43
Thr Arg Pro Gly Leu Val Ala Pro Ala Pro Leu Ala Gln Glu Arg Glu
1 5 10 15
Glu Asp

<210> 44

<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 44
Ala Gln Glu Arg Glu Glu Asp Asp Glu Asp Asp Trp Asp Glu Glu Asp
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<212> PRT
<213> Mycobacterium tuberculosis

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Ala Gly

<210> 46
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<213> Mycobacterium tuberculosis

<400> 46
Ala Arg Leu Met Ala Gly Ala Gly Pro Ala Pro Met Leu Ala Ala Ala
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Ala Gly

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<213> Mycobacterium tuberculosis

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Asp Ala

<210> 48
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 48
Thr Leu Ser Ala Ala Leu Asp Ala Gln Ala Val Glu Leu Thr Ala Arg
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Leu Asn

<210> 49
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 49
Val Glu Leu Thr Ala Arg Leu Asn Ser Leu Gly Glu Ala Trp Thr Gly
1 5 10 15
Gly Gly

<210> 50
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<212> PRT
<213> Mycobacterium tuberculosis

<400> 50
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1 5 10 15
Thr Pro

<210> 51
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 51
Lys Ala Leu Ala Ala Ala Thr Pro Met Val Val Trp Leu Gln Thr Ala
1 5 10 15
Ser Thr

<210> 52
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 52
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<210> 53
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 53
Lys Thr Arg Ala Met Gln Ala Thr Ala Gln Ala Ala Ala Tyr Thr Gln
1 5 10 15
Ala Met

<210> 54
<211> 18
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<213> Mycobacterium tuberculosis

<400> 54
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1 5 10 15
Ala Ala

<210> 55
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

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Thr Pro Ser Leu Pro Glu Ile Ala Ala Asn His Ile Thr Gln Ala Val
1 5 10 15
Leu Thr

<210> 56
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 56
Leu Pro Glu Ile Ala Ala Asn His Ile Thr Gln Ala Val Leu Thr Ala
1 5 10 15
Thr Asn

<210> 57
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 57
Val Leu Thr Ala Thr Asn Phe Phe Gly Ile Asn Thr Ile Pro Ile Ala
1 5 10 15
Leu Thr

<210> 58
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

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1 5 10 15
Trp Asn

<210> 59
<211> 30
<212> DNA
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30

<210> 60
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<400> 60
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31

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<400> 61
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<400> 64
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<210> 65
<211> 48
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<400> 65
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48

<210> 66
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